

Commonwealth of Kentucky
Division for Air Quality
PERMIT STATEMENT OF BASIS

TITLE V (DRAFT) NO. V-05-085

TRANMONTAIGNE PRODUCT SERVICES INC – GREATER CINCINNATI TERMINAL
COVINGTON, KENTUCKY

MAY 15, 2006

REVIEWED BY KENVIRONS, INC.

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| SOURCE I.D. #: | 021-117-00004 |
| SOURCE A.I. #: | 2504 |
| ACTIVITY #: | APE20040001 |

SOURCE DESCRIPTION:

TransMontaigne Product Services – Greater Cincinnati Terminal is a bulk petroleum terminal located in Covington, Kentucky (Northern Kentucky/Greater Cincinnati area.) The terminal has the capacity to dispense diesel fuel, conventional gasoline, reformulated gasoline, asphalt and mineral spirits. Currently, the terminal is using seven (7) external floating roof storage tanks for gasoline, four (4) fixed roof storage tanks for asphalt, and six (6) fixed roof distillate storage tanks. All of these gasoline storage tanks are existing, and were constructed during or prior to 1959. The source has converted four gasoline storage tanks to asphalt storage tanks. Two 7.3 mmBtu/hr asphalt heaters are in operation at the terminal, with one being a backup. Asphalt cement is also loaded at the facility. Five distillate storage tanks are existing and one distillate tank (T-27) was added as an Insignificant Activity. The loading rack (LR-1) is a two-bay unit with ten loading arms with air emissions controlled by a 98% efficient, McGill Incorporated Adsorption/Absorption Vapor Recovery Unit, Model # 70238. The vapor recovery system is operated only when gasoline is loaded or when loading petroleum liquids in conjunction with gasoline. The terminal is applying for the potential to process 420,480,000 gallons/year of gasoline, distillate, and glycol, and 175,000,000 gallons/year of asphalt through the loading rack (LR-1). The facility is not currently storing or loading gasoline, but applied to retain the option to handle gasoline. A second loading rack (LR-2) is used to load out asphalt only and has the capacity to process 20,000,000 gallons/year. The facility also performs barge loading (BRG-1) of distillate and glycol materials. The barge loading facility has the potential to process 735,584,000 gallons/year of each material.

TransMontaigne Product Services – Greater Cincinnati Terminal is classified as a Title V major source of air pollution, based on the potential to emit more than 100 tons per year volatile organic compounds (VOC). The facility is currently operating under Title V Permit No. V-98-019. TransMontaigne applied for renewal of the operating permit, with the renewal application received at the Division on June 20, 2003 with minor changes. Two insignificant activities were added to Section C – Insignificant Activities: (1) the addition of a 7,497 gallon fixed roof distillate storage tank (T-27), and (2) the addition of Glycol/Biodiesel storage and loading activities. An Administrative Revision was also requested, specifically the revision of the mailing address to P.O. Box 5660, Denver, Colorado 80217. The renewal application was deemed complete on August 19, 2005 (60 days after receipt of application).

The following is a list of significant emission units:

EP 01 (LR-1) Loading Rack, constructed in 1958 and modified after December 17, 1980, consists of a two-bay tank truck loading rack with ten loading arms and associated pipeline equipment. LR-1 is capable of loading all liquids handled by TransMontaigne. VOC and HAP emissions are controlled when loading gasoline by an adsorption/absorption vapor recovery system with a control efficiency of 98%. The vapor recovery system was constructed in 1983.

The equation in the Compliance Demonstration is derived from AP-42 5.2 Equation (1):

Emissions from loading petroleum liquid can be estimated (with a probable error of ± 30 percent) using the following expression:

$$L_L = (12.46 \text{ SPM} / T)$$

where:

L_L = loading loss, pounds per 1000 gallons ($\text{lb}/10^3 \text{ gal}$) of liquid loaded

S = a saturation factor (see Table 5.2-1) = 0.6

P = true vapor pressure of liquid loaded, pounds per square inch absolute (psia) (see Figure 7.1-5, Figure 7.1-6, and Table 7.1-2)

M = molecular weight of vapors, pounds per pound-mole ($\text{lb}/\text{lb-mole}$) (see Table 7.1-2)

T = temperature of bulk liquid loaded, $^{\circ}\text{R}$ ($^{\circ}\text{F} + 460$) = $70 + 460 = 530$ $^{\circ}\text{R}$

$$L_L (\text{lb}/10^3 \text{ gal}) = (12.46 \times 0.6 \times (P \times M) / 530) = 0.01410566 \times (P \times M)$$

@98% control =

$$L_L (\text{lb}/10^3 \text{ gal}) = (1 - 98\%) \times 0.01410566 \times (P \times M) = 2.82 \times 10^{-4} \times (P \times M)$$

$$L_L (\text{lb} / \text{gal}) = 2.82 \times 10^{-4} \times (P \times M) / 1000 \text{ gal} = 2.82 \times 10^{-7} \times (P \times M)$$

EP 02 through 08 Petroleum Product Storage Facilities, consists of seven (7) external floating roof gasoline storage tanks. Includes T-1 and T-2 having a capacity of 1,260,000 gallons, and T-3 through T-7 each with a capacity of 420,000 gallons.

EP 12 (BRG-1) Barge Loading, consists of barge loading pipeline equipment used for the handling of distillate and glycol materials.

EP 20 (--) Asphalt Heaters, consists of two (2) 7.3 mmBtu/hr asphalt heaters. Each heater burns natural gas as primary fuel and high sulfur diesel fuel.

EP 13 (FUG-1) Fugitives, consists of fugitive emissions from equipment leaks, excluding equipment leaks associated with EP 01 (LR-1).

EP 21 (LR-2) Asphalt Loading, consists of a loading rack and associated pipeline equipment. Capacity to load only asphalt.

This source is subject to:

1. 401 KAR 60:005, Section 3(1)(a), incorporating by reference 40 CFR 60 Subpart A, *General Provisions*.
2. 401 KAR 60:005, Section 3(1)(bbb), incorporating by reference 40 CFR 60 Subpart XX, *Standards of Performance for Bulk Gasoline Terminals*.
3. 401 KAR 61:005, *General provisions*.
4. 401 KAR 61:050, *Existing storage vessels for petroleum liquids*.
5. 401 KAR 63:002, Section 3(1)(t), incorporating by reference 40 CFR 60 Subpart Y, *National Emissions Standards for Marine Tank Vessel Loading Operations*.
6. 401 KAR 59:015, *New indirect heat exchangers*.

Applicable requirements specific to each emission unit are listed as follows:

EP 01 (LR-1) Loading Rack:

401 KAR 60:005, Section 3(1)(bbb), incorporating by reference 40 CFR 60 Subpart XX, *Standards of Performance for Bulk Gasoline Terminals* applies to the volatile organic compound (VOC) emission from the loading of petroleum distillates having a Reid vapor pressure of 27.6 kilopascals into gasoline tank trucks. Compliance assurance with the VOC limitation shall be demonstrated via calculation of the controlled emission limit, also via testing procedures specified in 40 CFR 60.8 and 40 CFR 60.503.

EP 02 through 08 Petroleum Product Storage Facilities:

401 KAR 61:050, *Existing storage vessels for petroleum liquids* applies to the VOC emissions from the storage of petroleum liquids. There are no specific emission limitations associated with this regulation; however compliance with the regulation is demonstrated through control/work practice standards, testing, monitoring, recordkeeping, and reporting.

EP 12 (BRG-1) Barge Loading:

401 KAR 63:002, Section 3(1)(r), incorporating by reference 40 CFR 60 Subpart Y, *National Emissions Standards for Marine Tank Vessel Loading Operations* applies to the emission of hazardous air pollutants from the loading of liquid products into marine tank vessels. There are no emission limitations associated with this subpart although Subpart Y requires an emission estimation and recordkeeping as required by 40 CFR 63.567(j)(4).

EP 20 (--) Asphalt Heaters:

401 KAR 59:015, *New indirect heat exchangers* applies to particulate, sulfur dioxide, and visible emissions from the operation of the asphalt heaters. Compliance with particulate emission limit is demonstrated by burning only natural gas or diesel fuel as specified in the permit. Compliance with the sulfur dioxide limit shall be assumed while combusting natural gas, when combusting diesel fuel the permittee shall maintain records of the amount of diesel fuel burned and certification of the percent sulfur in the current diesel fuel. Compliance with visible emission limit shall be assumed while burning natural gas, when burning diesel fuel the permittee shall perform daily qualitative visual observations and if visible emissions are seen then the permittee shall perform EPA Method 9 testing.

EP 13 (FUG-1) Fugitives:

There are no state or federal requirements associated with this emission point.

EP 21 (LR-2) Asphalt Loading

There are no state or federal requirements associated with this emission point.

Non-Applicable Regulations:

- a. 401 KAR 50:012, *General Application*, will not apply to the uncontrolled VOC emissions from the individual emission points since the emissions from the individual points are below 100 TPY.
- b. 401 KAR 63:002 Section 3(1)(h), incorporating by reference 40 CFR Part 63 Subpart R, *National Emission Standards for Hazardous Air Pollutants for Gasoline Distribution Facilities (Bulk Gasoline Terminals and Pipeline Breakout Stations)*. At the PTE of this terminal, the MACT standards will not apply since hazardous air pollutant emission rates are below 10 TPY for any specific hazardous air pollutant or 25 TPY total for all HAPs, respectively.
- c. 401 KAR 60:005 Section 3(1)(m), incorporating by reference 40 CFR 60 Subpart I, *Standards of performance for hot mix asphalt facilities*. Because of the definition specified at 40 CFR 60.91, this regulation does not apply to the asphalt storage, loading, or heating. 40 CFR 60.91, Definitions - *hot mix asphalt facility* means any facility, as described in 40 CFR 60.90, used to manufacture hot mix asphalt by heating and drying aggregate and mixing with asphalt cements. This terminal only stores asphalt cement. It does not perform any of the operations specified under the above definition.
- d. 40 CFR 60 Subpart D, *Standards of Performance for Fossil-Fuel-Fired Steam Generators for Which Construction was Commenced After August 17, 1971*, Subpart Da, *Standards of Performance for Electric Utility Generators for Which Construction was Commenced After September 18, 1978*, Subpart Db, *Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units*, and Subpart Dc *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* do not apply because the Asphalt Heaters are not used for the generation of steam.
- e. 40 CFR 63 Subpart DDDDD, *National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters* does not apply to the Asphalt Heaters. TransMontaigne is not a major source of Hazardous Air Pollutants.
- f. 40 CFR 64 Compliance Assurance Monitoring (CAM). Not applicable since no control devices are employed to meet an applicable emission limit.

COMMENTS:

Types of Control:

The volatile organic compounds (VOC) and hazardous air pollutants (HAP) emissions from the loading rack (LR-1) are controlled by a 98% efficient, McGill Incorporated Adsorption/Absorption Vapor Recovery Unit, Model # 70238. The vapor recovery unit is only when loading gasoline.

Emission Factors and Their Source:

VOC emissions from the asphalt, gasoline, and distillate storage tanks were calculated by using EPA's Tanks 4.0. Therefore the VOC emission factor used in the Emissions Inventory System (EIS) were back calculated using storage tank capacity for Breathing Loss (or Standing Loss) and maximum throughput for Working Loss (or Withdrawal Loss). The Tanks were grouped by size and throughput.

The emission factors for HAP emissions from **gasoline** storage tanks were based on percent weight (wt%) of each HAP present in the total VOC emissions. These wt% values are found in *Hazardous Air Pollutant Emissions from Gasoline Loading Operations at Bulk Gasoline Terminals*, API

Publication No. 347, Table 5-2, October 1998. The emission factors used in the EIS were calculated by multiplying the total VOC emission factor by the wt% found in the above mentioned publication.

The emission factors for HAP emissions from **distillate** storage tanks were based on percent weight (wt%) of each HAP present in the total VOC emissions. These wt% values are found in *Compilation of Air Emission Factors for Petroleum Distribution Retail Marketing Facilities*, September 1995. The emission factors used in the EIS were calculated by multiplying the total VOC emission factor by the wt% found in the above mentioned publication.

The VOC emission factors for the loading of distillate, asphalt, and glycol from the Loading Racks LR-1, LR-2, and the Barge Loading BRG-1 were developed following procedures specified in AP-42 Section 5.2. The VOC emission factor for Transit Vapor Loss was also taken from AP-42 Section 5.2. The HAP emission factors were calculated in the same manner as mentioned above for gasoline and distillate storage tanks. The VOC emission factor for the loading of gasoline from the Loading Racks LR-1 was developed by the source and was based on proposed limitations. The Potential to Emit from all loading activities are calculated as uncontrolled emissions.

The source calculated fugitive VOC emissions from equipment leaks by following procedures specified in *Fugitive Emissions from Equipment Leaks II: Calculation Procedures for Petroleum Industry Facilities*, API Publication 343, May 1998. The VOC emission factor was then back calculated based on the maximum material throughput, in this case the annual throughput of distillate to BRG-1. The HAP emission factors used in the EIS were calculated by multiplying the total VOC emission factor by the wt% found in *Hazardous Air Pollutant Emissions from Gasoline Loading Operations at Bulk Gasoline Terminals*, API Publication No. 347, Table 5-2, October 1998.

Emission factors associated with the Asphalt Heaters were taken from AP-42 Section 1.4. The percent sulfur in the high sulfur diesel fuel used as secondary fuel was assumed to be 0.5 % for the derivation of the SO₂ emission factor.

EMISSION AND OPERATING CAPS DESCRIPTION:

NA

PERIODIC MONITORING:

EP 01 (LR-1):

Pursuant to 40 CFR 60.502(j) each calendar month, the vapor collection system, the vapor processing system, and each loading rack handling gasoline shall be inspected during the loading of gasoline tank trucks for total organic compounds liquid or vapor leaks. For purposes of this paragraph, detection methods incorporating sight, sound, or smell are acceptable. Each detection of a leak shall be recorded and the source of the leak repaired within 15 calendar days after it is detected.

EP 02 Through 08:

Pursuant to 401 KAR 61:050 Section 5:

- a. If a liquid having a true vapor pressure greater than 7.0 kPa (1.0 psia) is stored in an external floating roof tank with a capacity of greater than 151,400 liter (40,000 gallons) not equipped with a secondary seal or approved alternative control technology, the owner or operator shall maintain a record of the average monthly storage temperature, the type of liquid, and the Reid vapor pressure of the liquid. The owner or operator shall retain the records for five (5) years after the date on which the record was made.
- b. The true vapor pressure shall be determined by using the average monthly storage temperature and typical Reid vapor pressure of the contained liquid or from typical available data on the contained liquid. Supporting analytical data shall be requested by the Division if there is a question on the values reported.

EP 20 (--)

When combusting high sulfur diesel fuel, sulfur dioxide emissions can be easily and accurately be estimated using well established emission factors, records of diesel fuel usage, hours of diesel combustion, and certified (from MSDS) sulfur concentration of the current diesel fuel being burned. Also, daily qualitative visual observations and, when needed, EPA Method 9 testing is sufficient periodic monitoring for particulate and opacity limitations specified in 401 KAR 59:015.

OPERATIONAL FLEXIBILITY:

NA

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.